

CLOCK GENERATION CIRCUITS AND INTEGRATED CIRCUIT MEMORY
DEVICES FOR CONTROLLING A CLOCK PERIOD BASED ON
TEMPERATURE AND METHODS FOR USING THE SAME

ABSTRACT OF THE DISCLOSURE

Clock generation circuits for an integrated circuit device are provided including a temperature sensor circuit, the temperatures sensor circuit including a calibration circuit responsive to a temperature coding signal and a temperature sensor. The temperature sensor circuit has a first or test mode state in which a temperature output signal of the temperature sensor circuit is based on a temperature sensor output control signal and a second or normal operating mode state in which the temperature output signal is based on the temperature sensor and the calibration circuit. A clock period controller circuit includes a calibration circuit responsive to a period coding signal. The clock period controller circuit generates a period control signal based on the temperature output signal and the calibration circuit of the clock period controller circuit. A clock generator circuit generates a clock signal based on the period control signal. Integrated circuit memory devices and methods for controlling the refresh period of the memory devices are also provided.

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